IFA CROSSROADS ASIA-PACIFIC 2014
Singapore
28 - 30 October 2014

Exploring for Sustainable Development

---China Phosphate & Sulphur Market

Isaac Zhao
CRU Beijing Office, China

CRU

Exploring for Sustainable Development

CRU

Exploring for Sustainable Development

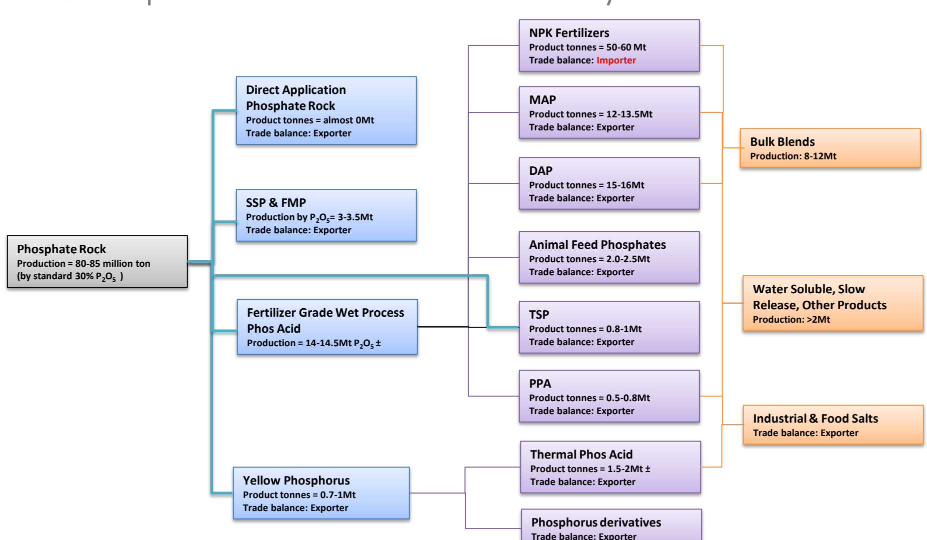
CRU

- China Phosphate Market Overview
- Challenges and Opportunities
- Sulphur Market: Trade & Production
- Summary & Outlook

Exploring for Sustainable Development

CRU

The Phosphate Products Chain in China Today



Source: CRU estimates

Exploring for Sustainable Development

CRU

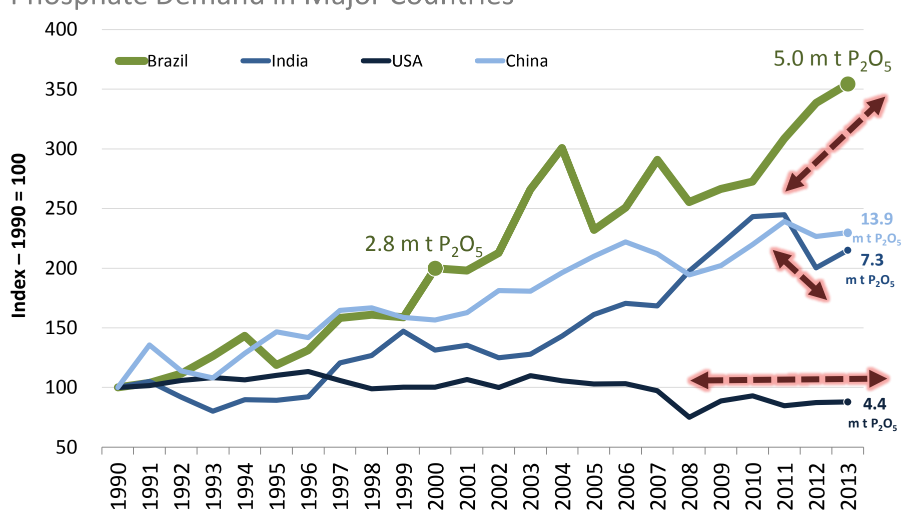
Evolution of China Phosphate Industry

	1990's	2001 - 2006	2007 - 2012	2013 >>>
Demand	In 2000, country total was 8.3Mt P_2O_5	Consumption grew to 12.13MtP_2O_5 in 2006	Growth slowed down & peaked in 2012 at 14.4Mt P_2O_5	Demand tends to be flat but structure changing
Supply	Domestic production 6.63Mt, incl 35% high-analysis	Total P production 12.1Mt P_2O_5 . Be self-sufficient.	Capacity expanded enormously & output beat 16.9Mt P_2O_5 in 2012	Total P capacity 21.5Mt Expansions slow down
Trade	Major importer in global market	Import 964kt Vs export 938kt, nearly balanced	DAP export stabilized at 3.5-4Mt, MAP & TSP fell	Tough year in 2013 due to sharply declined demand but recovery in 2014
Features of stage	Import dependence →	Substitution of import →	Rapid expansion and then export to relieve domestic oversupply →	Exploring new products, and new markets

Exploring for Sustainable Development

CRU

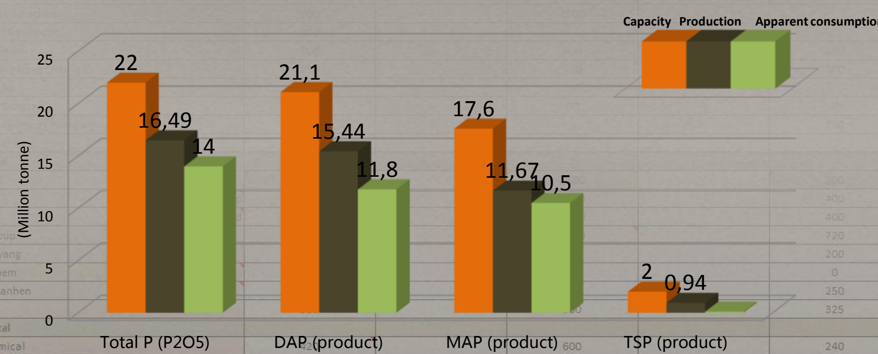
Phosphate Demand in Major Countries



Source: CRU estimates

Exploring for Sustainable Development

Oversupply Remains, Road of Development in the Haze-fog of PM2.5



Source: CPIA, CRU estimates

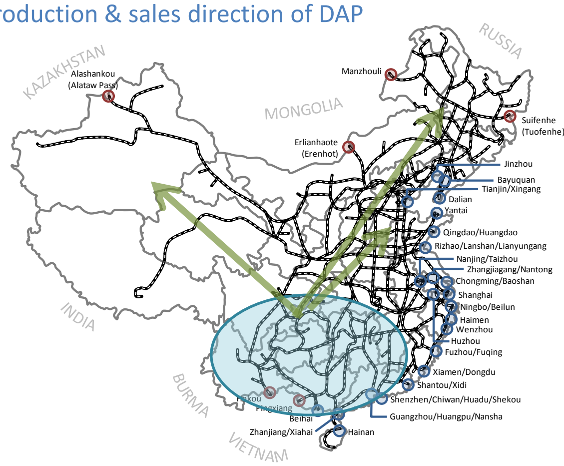
Exploring for Sustainable Development

- China Phosphate Market Overview
- Challenges and Opportunities
- Sulphur Market: Trade & Production
- Summary & Outlook

Exploring for Sustainable Development

Challenge 1: Ever Rising Transport Cost

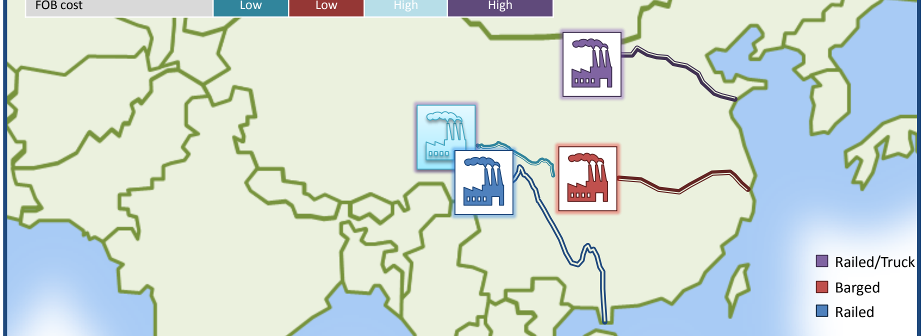
Production & sales direction of DAP



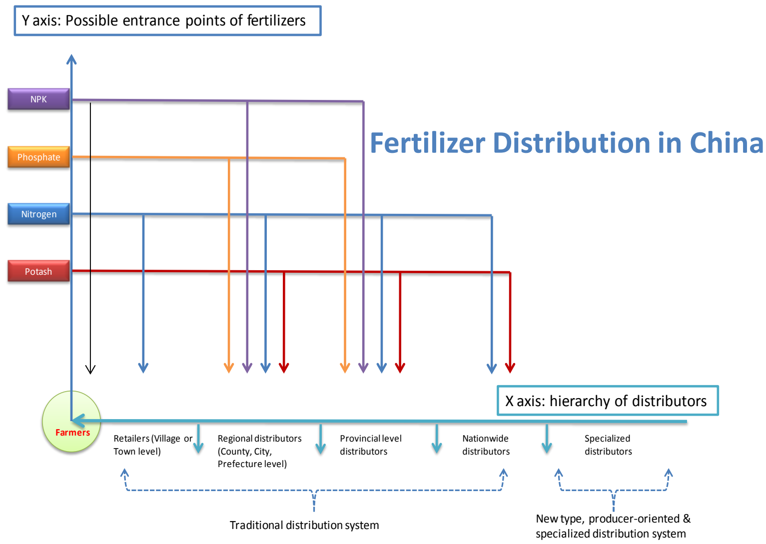
Exploring for Sustainable Development

Transport Cost: The Key Factor in Export

DAP & MAP	Yunnan/ Guizhou	Hubei	Sichuan	Others
Integrated ?	Yes	Yes	Partly	No
Production cost	Low	Low	Medium	High
Transport cost+Port charge($)	40-60	15-25	20+	Low-Medium
FOB cost	Low	Low	High	High



Challenge 2: Lower Margin Intensified Competition



Challenge 3: Competition & Uncertainties in India Market

Exploring for Sustainable Development

CRU

Challenges Are Also Opportunities

Challenges

- Soaring logistic cost.
- Low margin, homogeneous in quality.
- Potential risk in Indian market.

But there are some issues haven't had good solutions, like pollution to water by N & P, compaction of soil by over application of fertilizer, etc….

Opportunities

- Combination of multi transport method + build storage capacity at market.
- Innovative products, incl water soluble, slow release and micro nutrients, plus more service in distribution, brings more value to customer.
- Exploring market in Oceania, North & South America by int'l grade products.

13

IFA Crossroads Asia-Pacific 2014 13

Exploring for Sustainable Development

CRU

More Opportunities: Purified Wet Process Phosphoric Acid (PPA)

CRU forecasts on the development route of PPA in China

In China

Rock → Phosphorus (P_4) → Thermal Acid → Phosphate Salts

Industrial Phosphate Producer

West world in 1980-1990's

Rock → Wet Process Acid → Purified Wet Acid → Phosphate Salts

Fertilizer Producer | Industrial Phosphate Producer

West world changed

Rock → Wet Process Acid → Purified Wet Acid → Phosphate Salts

Fertilizer Producer | Ind. Phos Producer

China's future

Rock → Wet Process Acid → Purified Wet Acid → Phosphate Salts

Fertilizer Producer

IFA Crossroads Asia-Pacific 2014 14

Tax Policy for Fertilizer: Challenges and Opportunities to the Industry

Export Tariff Changes Vs **Imposing VAT on Fertilizers**

Export Tariff Changes

- High export tax during peak season might be removed. Tax rate would be flat for the whole year.
- Compared to current tax rate during peak season (15%+Rmb50), the new tax rate would be lower, allowing export at anytime.
- As experience in previous years, official policy to be published in the first half of December and be effective from 1 Jan 2015.
- Exporters expect some demand from South & North America, Oceania in early 2015,

Imposing VAT on Fertilizers

- Would be 13% once implemented, applies on all fertilizers, regardless for domestic sales or export.
- Not clear whether would start from beginning of 2015 or at a later time.
- As CRU estimates, producers would have Rmb50-150/ton increase in cost. Measured by tax/price, phosphate pays less than N & K.
- A signal that subsidy to fertilizer is to be removed. Marketization benefits the industry in the long term.

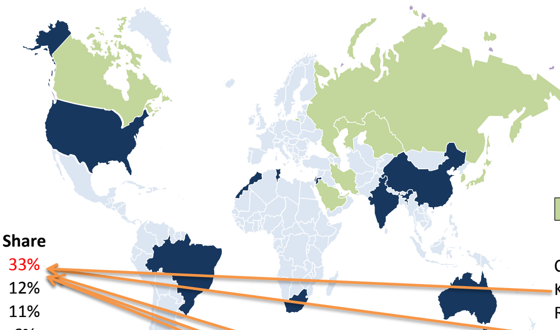
But no one knows the details yet and the overlap effect of both policies thus the industry is waiting…

Exploring for Sustainable Development

- China Phosphate Market Overview
- Challenges and Opportunities
- Sulphur Market: Trade & Production
- Summary & Outlook

Exploring for Sustainable Development

China Remains Largest Buyer of Sulphur in the World



Importers

	Mt	Share
China	10.6	33%
Morocco	3.8	12%
USA	3.3	11%
Brazil	2.1	6%
India	1.3	4%
Australia	1.1	4%
Tunisia	1.1	3%
Israel	0.6	2%
Jordan	0.6	2%
South Africa	0.5	2%

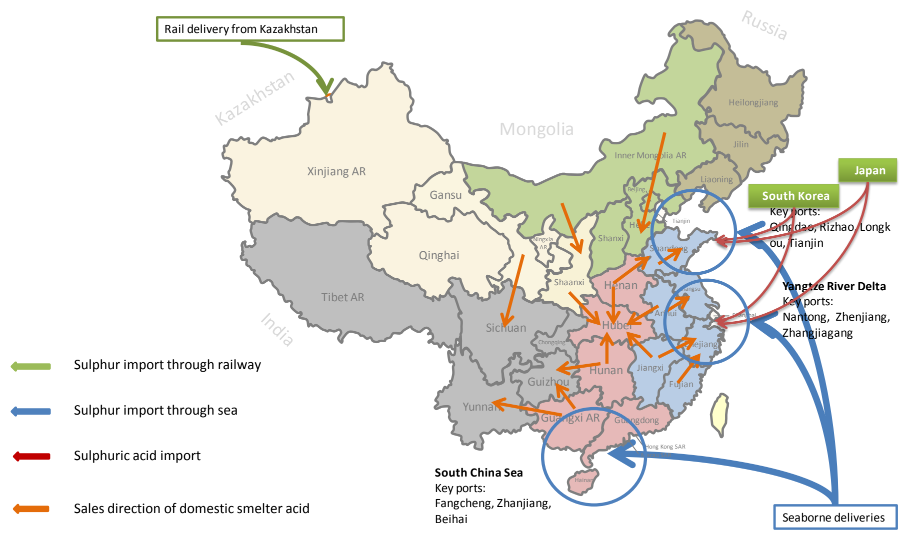
Exporters

	Mt	Share
Canada	5.6	18%
Kazakhstan	3.9	12%
Russia	3.7	11%
Saudi Arabia	2.8	9%
Qatar	2.1	7%
UAE	2.1	7%
USA	1.8	6%
Japan	1.2	4%
Iran	1.1	4%
South Korea	1.0	3%

2013 trade – 31.4 million tonnes

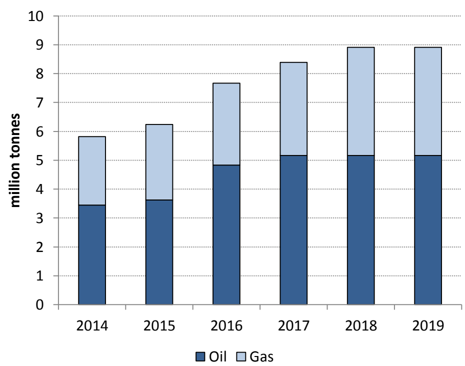
Exploring for Sustainable Development

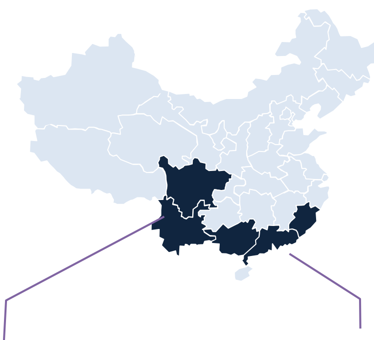
Diversified Source of Sulphur & Sulphuric Acid



Exploring for Sustainable Development

Domestic Capacity of Brimstone is Expanding





Sichuan & Yunnan
Chuandongbei gas (2015-2017): + 1.20 million tonnes
Pengzhou Refinery (2015): + 0.10 million tonnes
Yuanba gas (2014-2016): + 0.28 million tonnes
Yunnan Refinery (2016): + 0.27 million tonnes

Fujian, Guangdong & Guangxi
Huizhou Refinery (2016): + 0.30 million tonnes
Jieyang Refinery (2016): + 0.48 million tonnes
Qinzhou Refinery (2014): + 0.26 million tonnes
Quanzhou Refinery (2014): + 0.38 million tonnes
Zhanjiang Refinery (2016): + 0.40 million tonnes

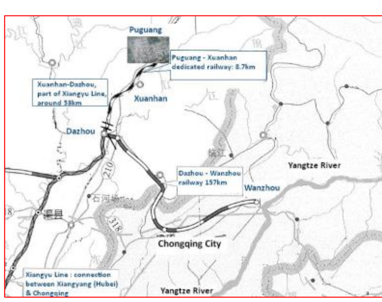
Source: NBS, CRU estimates

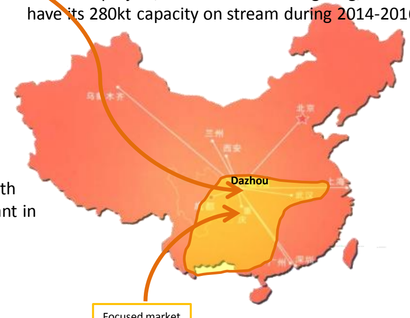
Exploring for Sustainable Development

Sinopec & CNPC: Two Oil Giants Contribute Most Production

SINOPEC

- 28 oil & natural gas refineries throughout the county. Sulphur business of most refineries incorporated into one unit.
- Puguang in Dazhou of Sichuan has capacity of 2.4mt and actual production 2.2mt.
- Total capacity of Sinopec >5million mt. Actual output in >4m mt. Both account for 80% of China
- Yuanba project, which is close to Puguang, would have its 280kt capacity on stream during 2014-2016





CNPC

- Current market share of 15% of domestic capacity.
- CNPC Southwest Gas Field has nearly 10 refineries with total capacity of 100kt + capacity in Sichuan. A new plant in Pengzhou may come on stream in 2015.
- Chuandongbei (CDB) natural gas project, a j/v with Chevron, scheduled on stream in October 2015. Total designed capacity of 3 phases is around1.2m tonnes.

- China Phosphate Market Overview
- Challenges and Opportunities
- Sulphur Market: Trade & Production
- Summary & Outlook

Recent & Forthcoming Reports of CRU

Product	Phos Fertilizer Market Outlook	Phos Fertilizer Cost Service	Phos Rock Market Outlook	Phos Rock Cost Service	Industrial/food Market Outlook	Inorganic feed Market Outlook
Frequency	Quarterly	Annual	Quarterly	Biennial	Biennial	Biennial
Last publication	Jul 2014	Sept 2014	May 2014	Jan 2014	Sept 2011	Jan 2013
Forthcoming publications	Oct 2014 (end)	Sept 2015	Aug 2014 (end)	Dec 2015	Mar 2015 (end)	2015
	Jan 2015 (end)		Nov 2014 (mid)			
	Apr 2015 (end)		Feb 2015 (end)			
	Jul 2015 (end)		May 2015 (mid)			

Exploring for Sustainable Development

CRU

Thank you!

Isaac Zhao

Phosphate, Sulphur & Sulphuric Acid

CRU Fertilizers

(formerly British Sulphur Consultants)

☎: +86 10 6510 2206 ext. 316
☎: +86 1380 132 8018
💻: isaac.zhao@crugroup.com
🖱: www.crugroup.com